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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,738	11/29/2001	Kyu Heon Kim	P67357US0	1873

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EXAMINER

WOO, ISAAC M

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/995,738

Applicant(s)

KIM ET AL.

Examiner

Isaac M Woo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Revsnkar et al (U.S. Patent No. 6,767,978, hereinafter, "Revankar") in view of Lokken (U.S. Patent No. 6,176,396).

With respect to claim 1, Revankar discloses, computing the number of edge pixels of objects in the static images, see (fig. 2, fig. 4, col. 12, lines 63-67 to col. 13, lines 1-14, col. 10, lines 51-67 to col. 11, lines 1-15) and measuring textures of the static image by numerating the number of edge pixels, see (fig. 2, fig. 4, col. 12, lines 63-67 to col. 13, lines 1-14, col. 10, lines 51-67 to col. 11, lines 1-15, note: textures are used to describe image as in form of text). Revankar discloses the measured textures, see (col. 12, lines 63-67 to col. 13, lines 1-14,). Revakar does not explicitly disclose sorting the measured textures according to a sorting order. However, Lokken discloses, "the Dtree program 208 requests the OLAP database API 120 to return the data point(s) in a

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sorted order according to measure values", see (col. 11, lines 55-63). This teaches the data is sorted based on sorting orders. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to include sorting the measured textures according to a sorting order in the system of the Revankar. Because the sorting is to arrange a collection of items (data) in some specified order, which is used for data storing, retrieval and displaying, etc., in computer data management system.

With respect to claim 3, Lokken discloses the sorting textures discussed above in claim 1, and sorting values closer to a texture inputted in a next time is one of the sorting parameters.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Revankar et al (U.S. Patent No. 6,767,978, hereinafter, "Revankar") in view of Lokken (U.S. Patent No. 6,176,396) further in view of Maruo et al (U.S. Patent No. 6,584,236).

With respect to claim 2, neither Revankar nor Lokken discloses the limitations of claim 2. However, Maruo discloses, performing an n-dimensional Wavelet transform by using a high pass filter so as to obtain edge information for the objects in the static images, see (fig. 6-7, col. 1, lines 56-67 to col. 2, lines 1-64); and eliminating noises included in the transformed static images through the use of a Sobel operator and computing the number of edge pixels of the objects in the static images, see (fig. 3-4,

col. 8, lines 51-63, col. 9, lines 8-20, col. 9, lines 58-67 to col. 10, lines 1-28, fig.7, col. 11, lines 16-34). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to include performing an n-dimensional Wavelet transform by using a high pass filter so as to obtain edge information for the objects in the static images, and eliminating noises included in the transformed static images through the use of a Sobel operator and computing the number of edge pixels of the objects in the static images in the system of the Revankar and Lokken. Wavelet transform with filter and noise eliminating provides high quality of images in image processing system.

4. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Revankar et al (U.S. Patent No. 6,767,978, hereinafter, "Revankar") in view of Cullen et al (U.S. Patent No. 5,933,823, hereinafter, "Cullen").

With respect to claim 4, Revankar discloses, measuring a texture of the query image by numerating the number of edge pixels of an object in the query image, see (fig. 2, fig. 4, col. 12, lines 63-67 to col. 13, lines 1-14, col. 10, lines 51-67 to col. 11, lines 1-15, note: textures are used to describe image as in form of text as discussed above in claim 1). Revankar discloses the static images sorted in the data image texture database, see (col. 9, lines 5-16). Revankar does not explicitly disclose, searching a texture close to the texture of the query image. However, Cullen discloses texture query

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would be formulated by development of an example image by any technique including the ones described above. A text query would include one or more text strings that would be found in a desired document. The search results would be limited to images meeting the criteria of both the texture query. This particular query technique is of course limited to image databases for which OCR results are available. First, document images including the desired pattern of text strings would be retrieved. The retrieved images are then searched for image having a texture similar to the specified one, see (col. 5, lines 51-67 to col. 6, lines 1-10). This teaches image searching with texture from image database. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to include searching a texture close to the texture of the query image in the system of the Revankar. Because texture searching for image provides high search results in image retrieval system.

With respect to claim 5, sorting textures (data) discussed above in claim 1.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zhang et al (U.S. Patent No. 6,434,261) discloses the system for for the detection and segmentation of bright images within a digital image using wavelets. One example of such a bright image is microcalcifications within a mammogram. Multiresolution analysis may be used to detect and segment the possible microcalcification areas by combining Bayes classifiers. By analyzing the time-frequency characteristics of clustered microcalcifications, the inventors first choose the optimized wavelet for the detection of microcalcifications. A wavelet packet analysis is then used to detect different size microcalcifications. An adaptive method of choosing the threshold for detection by using a one-dimensional wavelet transform to analyze the PDF of the images at different scales is used. Then, a scheme to detect different size microcalcifications in different scale wavelet packet transformed images is developed.


**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac M Woo whose telephone number is (703) 305-0081. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

IMW  
February 12, 2004

  
SHAHID ALAM  
PRIMARY EXAMINER